UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA

SONY MUSIC ENTERTAINMENT, *et al.*,

      Plaintiffs,

v.

COX COMMUNICATIONS, INC., *et al.*,

      Defendants.

Case No. 1:18-cv-00950-LO-JFA

CONTAINS HIGHLY CONFIDENTIAL –
ATTORNEYS' EYES ONLY
INFORMATION

DECLARATION OF BARBARA FREDERIKSEN-CROSS IN SUPPORT OF
PLAINTIFFS' OPPOSITION TO DEFENDANTS' MOTION FOR SUMMARY
JUDGMENT

I, Barbara Frederiksen-Cross, hereby declare pursuant to 28 U.S.C. § 1746 that the following statements are true and correct to the best of my personal knowledge and belief:

Introduction

1.   I have been retained by Plaintiffs in the above-captioned action to provide expert testimony on the function of the internet and peer to peer ("P2P") file distributions, perform an assessment of the MarkMonitor infringement detection and notification system, perform an assessment of the Audible Magic technology, and conduct a review of the Cox processing system known as CATS. I have previously provided a declaration in connection with Plaintiffs' Motion of Summary Judgment dated August 29, 2019. To avoid repetition, I assume the reader's familiarity with its contents. The observations and conclusions set forth below are based on my own observation and use of the relevant technology, as informed by my specialized knowledge, education, and expertise as applied to the facts and circumstances in this case. If necessary, I

would and could competently testify to such observations and conclusions if called as a witness in this matter.

Uploading Content to P2P Networks

2.   As detailed in my prior declaration, ████████████████████████

██

███████████████████████████████ For ease of discussion, I will use the term "content item" to refer to either a file or a set of files, as appropriate for a given network. In the vast majority of cases, ████████████████████████████████████

█████████ By necessity, in order for MarkMonitor to observe the Cox subscriber, the subscriber had to be sharing at least part of a content item.

3.   The procedure for taking a content item from an off-network source and sharing it via a P2P network is different between Ares, eDonkey, and Gnutella on one hand, and BitTorrent on the other.

4.   In the non-BitTorrent P2P networks, the client software provides the user the opportunity to designate a folder or folders on his or her computer as shared folders. The details of this process vary by system, but the software then registers files in any shared folders with the P2P network, and they can subsequently be shared. When users download content items from these P2P networks, the client software places the downloaded content items in a folder that is designated for sharing. This facilitates dissemination of popular files. While the files in a particular user's shared folder may be a mix of files downloaded from the P2P network and obtained elsewhere, none of the networks require users to share files obtained from sources other than the P2P network to participate in the P2P network.

5.   In the case of BitTorrent, the procedure for sharing files involves some extra steps. Users of BitTorrent often share sets of files consisting of audio files for each track on an album and an image file of the album's cover art, all present in one folder. A user with such a set from non-P2P network source who wishes to share it on BitTorrent would need to use a feature of BitTorrent client software to create a dot-torrent file for the set. The dot-torrent file contains a variety of data including the name of the folder, the names of the files, and hashes of pieces of the combined file content. Even if two users had identical files, they might choose different folder and file names or differently partition the file content. Doing so would yield a different dot-torrent file with a different corresponding infohash, an alphanumeric value described in more detail in my prior declaration, that uniquely identifies the set as configured by the user. Next, to let the world know the new dot-torrent file exists, the user must either upload it to a torrent website or provide some other way for users to obtain the dot-torrent file.

6.   When a user opens the dot-torrent file with BitTorrent client software, the software registers with the network that the user is participating in downloading or sharing the set of files referenced and represented by the particular dot-torrent file. The originating user already has the file set, so this user only uploads, and never downloads, the item. Other users finding the dot-torrent file on a torrent site and opening it with their client software will download from this originating user and become sources themselves. This happens even before these other users have the entire item; they become sources of the portion they have downloaded while they are downloading the remainder. Obviously, this speeds distribution of popular files.

7.   BitTorrent clients operate as described above. Based on the "tit for tat" model described in my prior declaration, the user's BitTorrent client automatically distributes pieces of

3

content items that it has while downloading the remainder. ███████████

██████████████████████████████████

8.   Through different means, all four of the networks at issue steer users looking for a given work (title) to other peers who are providing the work.

MarkMonitor Detected Multiple Copies of the Same Files Across Cox Users

9.   The records MarkMonitor produced in this case, ███████████

██████████████████████████████████████

██████████████████████████████████████

██████████████████████████

a. ████████████████████████████████████

██████████████████████████████████████

████ ███ █ ████ ████ ████ █ █ ████

██████████████████████████████████████

██████████████████

b. ████████████████████████████████████

██████████████████████████████████████

███ █ ████ ████ ████ █ █ ████

██████████████████████████████████████

██████████████████

c. ████████████████████████████████████

██████████████████████████████████████

██████████████████████████████████████

██

████████████████████████████

███

██████████████████████████████

10.   When confronted with identical content items being shared by multiple users on a peer-to-peer file-sharing network, it is overwhelmingly likely that the users have copied the files from each other. The proposition that users observed with identical music files (or identically configured sets of music files in the case of BitTorrent) introduced them to these networks through off-network sources and did not distribute them to anyone is very unrealistic.   These are file sharing networks. The purpose is to download and upload files. A user observed with the content file has it in a folder designated for sharing or, for BitTorrent, has created or downloaded a dot-torrent file that identifies the content file for users of the BitTorrent network.

11.   By analogy, suppose you are a teacher and have received term papers from your class. To your disappointment, you find that each student has not submitted a unique paper; in fact, almost all of your students submitted a paper that exactly matched that of one or more other students. Worse, you have found 100% of the papers on the internet. In addition, some of the papers are themselves sets of essays identically titled and organized. Of course, it is theoretically possible that the students independently wrote identical papers, but common sense tells you that is incredibly unlikely. Likewise, in the context of peer-to-peer file-sharing networks, which are used solely for the purpose of downloading and sharing files, when identical files or sets of files are found shared from multiple users, there exists a theoretical possibility that the users observed with identical music files (or identically configured sets of music files in the case of BitTorrent) introduced them to these networks through off-network sources but did not distribute them to

anyone, but the probability of that is extremely unlikely and unsupported by the evidence I have reviewed.

Executed in Washington, D.C this 24th day of September 2019

Barbara Frederiksen-Cross